WEEKLY EDITION
OF THE
AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL
PUBLISHED BY
THOMAS G. NEWMAN,
EDITOR AND PROPRIETOR,
925 WEST MADISON-STREET, CHICAGO, ILL.
Weekly, $2 a year; Monthly, 50 cents.

Vol. XXI. February 25, 1885. No. 8.

"Northwestern."—Dr. C. C. Miller, President of this Society, asks for a vote by mail, on the subject of having the next meeting at Detroit with the "National" Convention:

EDITOR BEE JOURNAL:—There seems to be what may be a general wish that the "Northwestern" should omit its meeting at Chicago next fall, and unite with the "National" at Detroit on Dec. 8-10. The officers have, I think, no right to make any change except upon vote of the members. May I trespass so far upon your time and patience as to ask you to request each member of the "Northwestern" to send you a postal giving his vote for Detroit or Chicago, and then the majority can rule?

☞ A correspondent in the *Apiculturist* accuses the BEE JOURNAL of copying the Query Department from that paper; and that assertion is endorsed by its editor. Both are a little *too fast*. In April, 1879, we had some Queries on abnormal swarming, and desiring to obtain the opinions of several apiarists on the subject, we sent the Queries to them, requesting replies (just as we are now doing). The queries and replies were published in the BEE JOURNAL for May, 1879—*four years before the Apiculturist was born!* Now, whose ox is gored? If there has been any copying, perhaps the *Apiculturist* is the guilty party! But WE shall not complain. Such *jealousy* would be foolish. We hope the "*Api*" may succeed, but it can hardly hope to do so, by such narrow-mindedness.

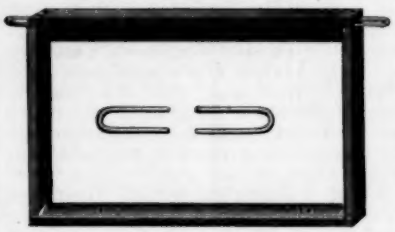
☞ Mr. J. B. Mason, of Mechanic's Falls, Maine, has sent us a sample of his dovetailed sections, made of white wood. They are exceedingly nice.

Another Apiarist Gone.

We are much pained to hear that Mr. William Williamson, of Lexington, Ky., died on the 13th inst. To him as much as to any other person in Kentucky are we indebted for the advanced state of apiculture in that State. He was a worker "in the hive of nature," and this news will be received with regret by apiarists generally. Just upon the eve of the assembling of the International Congress, at New Orleans, one of its advocates and a member of the Committee has fallen. This will cast a gloom over that meeting. Our sympathies are with the bereaved in this hour of sadness and sorrow.

We hear a rumor that another Kentucky bee-keeper has suddenly died—a pioneer—but as there is a bare possibility of its not being verified (it may be another man of the same name) we will not announce the name till further information is received. One by one, the pioneers are departing this life.

☞ Mr. C. L. Hedell, Galesburg, Ill., has sent us one of his reversible frames. The illustration will give a



good idea of it. The top and bottom bars are alike and are **V**-shaped, and have an extra groove running their entire length. The brass staples slide into these grooves, at the ends, and form the hanging portion of the frame. All that is necessary to reverse the frame at will, is to slip out these staples at the top, put them into the bottom, and place the frame inverted into the hive. Mr. Hedell used these frames last season, says that they can be made at a very trifling cost, and likes them very much. The sample frame is placed in our Museum.

Catalogues for 1885.—We have received the following:

A. H. Duff, Creighton, O.
Earle Clickenger, Columbus, O.
Lucio Paglia, de Castel S. Pietro, dell 'Emilia, en Italia.
R. M. Morrill, Plymouth, Ind.—Grapes.

☞ We have received another attachment for reversible frames. It consists of a piece of sheet iron bent something like this hook at the top. The long part must be screwed to the center of the side-bar of the frame, which can be reversed at pleasure; the upper hook rests on the rabbets on the side of the hive, the same as does the ordinary flange of the top-bar. It can be attached to any frame by cutting off the end of the top-bar. A small screw through a hole in the upper part of the sheet-iron holder, will keep the frame from tipping, or the hole can be punched out instead of being bored, and the rough part of the hole can be let into the frame with a pen-knife, and hold it steadily. This device is sent us by D. L. Whitney and H. A. Webber, of Rockton, Ill. Mr. W. thinks that they can be made for a little more than one cent a frame.

☞ The English *Farmers' Gazette* says that the report of the county analysts for Kent, states that the preparation sold by grocers as California honey is in reality a mixture of honey with 50 per cent. of corn syrup. A Sheerness grocer was prosecuted for selling this preparation to a policeman who demanded honey; but as it was plainly labeled "California Honey-Dew," the bench declined to convict.

It is a pity that such spurious stuff could not be driven from all the markets of the World, by stringent legislation.

☞ We have received a brood-frame from J. W. Tefft, Collamer, N. Y., which has the ends of the side-bars and top and bottom-bars full width (1½ inches) and the middle portions cut down to one inch; the top-bar is also cut lengthwise into 2 pieces to admit the foundation between them before being nailed together. It is much the same as many of the frames in use in Europe.

☞ The Sixth semi-annual meeting of the Western Bee-keepers' Association will be held in Unity Chapel, at St. Joseph, Mo., on Felix St., between 7th and 8th streets, on Thursday and Friday, April 9 and 10, 1885, commencing at 10 a. m. on April 9. All interested in bee-culture are invited to attend and make the meeting as interesting as possible. A full programme will be prepared and a general good time may be expected.

C. M. CRANDALL, *Sec.*

QUERIES

WITH

REPLIES by Prominent Apiarists.

Bees Expelling Water from Sweets.

Query, No. 19.—Some have asserted that bees have the power of expelling water from diluted sweets, when on the wing, etc. Now, I long to see this matter subjected to the eye of science. Has there been a gland discovered whose function, resembling that of the kidneys, seems to be that of separating water, etc.?—La Porte City, Iowa.

DR. G. L. TINKER replies as follows: "Bees never expel water from diluted sweets when on the wing. This whole question is intimately related to one of the most common causes of bee-diarrhea. When from a low or a moderately cool temperature bees are unable, by pulmonary or cutaneous transpiration, to expel water from sweets, whether diluted or not, water will accumulate in the intestines; but there exists all the more danger of such accumulation if the winter stores of sweets are diluted or thin from any cause, such as late-gathered sweets or thin sugar syrup that the bees are unable to evaporate to the proper consistency for sealing up before winter sets in. Another cause of thin honey or syrup, is a very humid atmosphere and dampness in the hive. Any of these causes where there is long confinement, especially, will cause bee-diarrhea. Diluted sweets, under any circumstances, must be considered unhealthy for bees whenever the conditions of temperature in the hive are such that the evaporation of sweets by transpiration cannot readily take place. Bees have no gland corresponding to a kidney; hence all normal expulsion of water from bees is by the lungs and the surface of the body."

Fall and Spring Weight.

Query, No. 20.—What becomes of the difference between fall and spring weight of colonies, sometimes amounting to 25 or 30 pounds, unless it evaporates from the bodies of the bees? What becomes of it, especially when the bees have no flight for several months, as the debris usually remaining in the hive in spring is of trifling amount?—Cato, Mich.

W. Z. HUTCHINSON, says that "the loss can be accounted for by perspiration and respiration."

G. W. DEMAREE answers thus: "The natural food of the honey-bee contains the least possible amount of gross matter; and as bees do not take on fat and thereby increase in weight, the digestion of honey in the stomach of the bee, is equivalent to its combustion. The honey is 'burned up,' and passes into the aeriform state."

DR. C. C. MILLER replies thus: "The quantity of water often seen running out at the entrances of hives in winter, shows a large amount of evaporation, probably enough to account for all difference in weight."

PROF. A. J. COOK remarks thus: "That there is much vaporous excretion through evaporation, is certain. This is true of all animals, and especially when the food is mostly of the carbo-hydrates."

G. M. DOOLITTLE replies as follows: "Mainly by evaporation, and partially by the excrement, and brood which all good colonies commence to rear in January, February and March."

JAMES HEDDON answers thus: "If that 25 or 30 lbs. of food that is gone, was very free from solid nitrogenous matter, it passed off in liquid or vaporous form, by way of sensible and insensible perspiration and respiration, except the small amount to be found in the bodies of the bees (not enough to disease them). If, on the other hand, the stores do contain much nitrogenous matter, you will find that it partly passed in vapor (as above), and partly in the bodies of the diseased bees, and on top of the frames' sides of the hive and combs, and we call it bee-diarrhea."

J. E. POND, JR., remarks as follows: "This question brings us face to face with the 'pollen theory,' and shows its impracticability. Stores are used as a matter of course; we know this for we find them gone; the residue or *debris* left in the hive, or found in front, after being removed by the bees, is too inconsiderable to account for the loss to the colony. Bees when confined to the hive under right conditions, use the least amount of stores possible; the food thus taken is used up largely in producing muscular force, and is of such a nature, that very little residue forms—not enough to overload the intestines in a long period of time, and what is formed is passed off in a dry state. Tests made on the human system have shown that by promoting excessive perspiration, and the use of concentrated food, the amount of *debris* passed off from the intestines is astonishingly small. We can reason by analogy that our bees are similarly circumstanced, especially when we know that nature always works in harmony with herself so long as her laws are not violated. I shall look with much interest to answers to this question."

Feeding Bees in Winter.

Query, No. 21.—What is the best method of feeding a colony of bees that is found to be without food in the hive in midwinter, if the colony is out-of-doors or in the cellar?—Solon, Maine.

DR. C. C. MILLER says: "Give combs of sealed honey."

PROF. A. J. COOK replies thus: "Without experience, I should say by placing cakes of the 'Good candy' above the frames. We should never allow our bees to be in this condition."

G. M. DOOLITTLE answers thus: "By setting in frames of sealed honey or combs filled with syrup. Such combs of feed should be warmed for 6 hours or so before being placed in the hive."

J. E. POND, JR., remarks thus: "If out-of-doors, put a small quantity of 'Good candy' on top of the frames, and cover in close and warm. Keep up the supply in the same manner until the advent of settled warm weather. I can imagine no better way for cellar wintering."

JAMES HEDDON answers as follows: "Many report success with sugar candy. Could I succeed with it, I should prefer it. In the few instances tried, I have failed. I now use a broad, flat feeder, with a large open communication (½ the size of the whole top of the hive). I put warm sugar syrup into it, pack the hive and feeder well, and carry it into a warm place, when the bees carry the liquid into their combs from the feeder, with perfect success."

G. W. DEMAREE replies as follows: "To feed bees successfully in cold weather, the feed must be placed in reach of the cluster. When you have no frames of sealed honey to give them, the next best way is to make a bag of the thinnest cotton-cloth you can find—say 5x8 inches in size; partially fill the bag with candied honey, or with sugar made into 'mush' by mixing it with warm water, or what is better, melted honey. Fill the bag so that it will assume a flat shape, and press it down flat, right over the cluster of bees, and cover all snugly with the bee-quilts. This is safer than any bee-candy. The bees will draw the feed through the cloth, and in process of time cut through to the more solid contents of the bag."

W. Z. HUTCHINSON advises the following: "Make a soft candy and lay it upon the tops of the frames, covering it up warm so that the bees can cluster upon it."

Location for an Apiary.

Query, No. 22.—Which is the better location for an apiary, where the bees are wintered out-of-doors, in a low location where it is somewhat frosty and reasonably well sheltered from the storms by hills, or one on high ground free from dampness, and with no shelter from the winds except what may be made by a tight board-fence?—East Liverpool, O.

G. W. DEMAREE answers thus: "I have moved my apiary three times since I located at this place. A low, sheltered site for the hives, has given the best satisfaction."

DR. C. C. MILLER says: "I should prefer the low ground sheltered by hills."

PROF. A. J. COOK replies thus: "I should prefer to have them up well and sheltered by a wind-break."

J. E. POND, JR., answers as follows: "For myself and my own locality, I should prefer the low location. I consider that high, cold winds and sudden storms, and the consequent changes produced by them, cause far more injury than severe cold can possibly do in a frosty location, even if somewhat damp; as dampness of a locality can have but little effect in frosty weather,

upon a colony of bees that is worth wintering."

W. Z. HUTCHINSON replies as follows: "The only objection to the low ground is that the cold air settles into the hollows, and I think that I should prefer the low ground. The laws of atmospheric drainage should be understood; there may be some outlet for the cold air in the low location."

JAMES HEDDON remarks thus: "I would prefer the low location (supposing no trouble from water), but so far as successful wintering is concerned, this is one of the 'great' factors in the problem. They will live or die in either place."

G. M. DOOLITTLE says: "I should choose the low location every time, for various reasons; prominent among which are, the temperature at the low location will average the warmest in early spring, less bees will be lost by high winds, and the laden bees will travel down hill rather than up hill."

Bees Affected with Diarrhea.

Query, No. 23.—I put 137 colonies into my bee-cellar on Nov. 29, 1884, all in good condition with plenty of honey. I did not feed any sugar syrup last fall, and now 6 of the heaviest ones have the diarrhea. Only these 6 have brood. They have been quiet all the time, and the tmperature has been steadily at 44°, for I go to see them every day. What can I do to save them? They are old bees that are affected, and in the 137 colonies there was no brood, for I was careful to look them over when I put them in. Why is it that some of them have the diarrhea and others do not have it?—Racine, Wis.

DR. C. C. MILLER answers thus: "See that the cellar is well ventilated, and perhaps by a little lower temperature."

J. E. POND, JR., says: "I apprehend that all of us would like a positive and certain answer to this question. I should myself, for one, and would pay a good price for it, too."

G. M. DOOLITTLE replies thus: "The querist answers the last question by saying that 'only these 6 have brood.' The brood caused the bees to eat pollen, and form it into chyme, which was passed around for food. It is doubtful whether anything can be done to save the bees, where diarrhea begins thus early."

W. Z. HUTCHINSON remarks thus: "When bees have the diarrhea in midwinter, it is almost, if not quite, impossible to save them; and I can only suggest, as an experiment, that the bees be given a flight, artificially, by carrying one colony at a time into a warm room, taking away their combs of honey, and giving them dry, clean combs, and changing their food to cane sugar. I would put soft candy over the frames and cover it so that the bees can cluster upon it. The greater degree of heat generated by the heaviest colonies, may have induced brood-rearing and consumption of pollen. Had there been no nitrogenous food in the hive, brood-rearing and diarrhea would have been impossible."

DR. G. L. TINKER answers as follows: "This query presents an argument against allowing a colony to have more winter stores than what is barely necessary to bring it through, or until it can be overhauled and supplied with fresh stores. A large amount of stores predisposes to brood-rearing at all times, while a colony short of stores never breeds very much. Late fall and early winter brood-rearing, without doubt, may cause diarrhea, the young bees causing most of the uneasiness and the breaking of the cluster. Early spring brood-rearing appears to be a normal occurrence, and the young bees then produced are usually able to fly out before great uneasiness occurs. To save them, see answer to No. 24."

First Symptoms of Bee-Diarrhea.

Query, No. 24.—What should be done with a colony of bees in winter quarters in the North, when the first symptoms of bee-diarrhea appear, if the colony is out-of-doors or in the cellar? To make the answer complete, state what should be done in midwinter when flight is impossible, later, when occasional flight is possible, and in early spring before any pollen is to be found.—Solon, Maine.

PROF. A. J. COOK answers thus: "If the temperature in the cellar was above 48° Fahr., I should cool it. I have given bees a flight in a warm room, but this is some trouble. I have known this to be done several times. Very often the colony will do very well even if left alone."

J. E. POND, JR., says: "It would require a long article to give the information desired in this question, and even then the answer would be largely theoretical."

MESSRS. DADANT & SON reply as follows: "Keep the bees warm and leave them alone until a warm day comes. The more you will disturb them in cold weather, the worse it will be. We would give the same answer to No. 23."

DR. C. C. MILLER advises the following: "Do all you can to keep the temperature of the cellar right, and especially to have the air of the cellar pure, and perhaps contracting the space of the brood-nest, if not already done."

W. Z. HUTCHINSON remarks thus: "As an experiment, I would try giving the bees a flight by carrying them into a warm room, giving them clean, dry combs, and putting a soft candy over the frames, covering it up so that the bees can cluster upon the candy. If bees continue to show signs of diarrhea after they can have an occasional flight, I would change their combs and food as above."

JAMES HEDDON replies thus: "Not saying what can or cannot be done, I will say that, practically, the best thing to do, is to give up that colony, and study the cause and prevention that may prevent the disease during the next winter. In this locality, I have never made any practical success in devoting time to saving colonies that had diarrhea in mid-winter."

G. M. DOOLITTLE says: "After trying all plans of cure, I now let them alone, for it is only a waste of time to fuss with them. If a warm day occurs and the bees are not too badly reduced, a flight should be given them by shoveling snow from the hive, or removing them from the cellar; yet for all this the bees will generally be dead before June, if they have the diarrhea bad enough to spot the combs and the inside of the hive."

DR. G. L. TINKER answers thus: "It is much like trying to gather up 'spilt milk' to try to save a colony of bees with diarrhea when flight is impossible. In the one case care should be taken not to spill the milk, and in the other, to properly prepare the bees for winter. Where it is possible, I would advise raising the temperature of the interior of the hive to facilitate transpiration and the expulsion of moisture, by placing a thick, all-wool mat over the frames. If in a cellar, raising the temperature to 48° or 50° by artificial heat, together with free upward ventilation, may aid the bees to find relief. Later on, when occasional flights are possible, I would contract the brood-chamber and give better protection. If the honey in the combs was thin, I would give good sealed honey or 'Good candy.'"

Bees Breeding Without Pollen.

Query, No. 25.—Will bees breed without any pollen in the hive?—Chesaning, Mich.

JAMES HEDDON answers thus: "No. If there is no bee-bread in the cells, and no floating pollen in the liquid food, no."

DR. G. L. TINKER says: "No."

W. Z. HUTCHINSON replies thus: "Bees cannot rear brood without nitrogenous food, and there may be enough in some honey to enable the bees to rear brood to a very limited extent."

G. M. DOOLITTLE remarks as follows: "I believe that they will, to a certain extent, where their food is honey. If sugar syrup is the only food, I think that no brood will be reared."

DR. C. C. MILLER replies as follows: "I think that they will not commence breeding without pollen, and continue but a short time when it is taken away."

PROF. A. J. COOK says: "Never."

J. E. POND, JR., answers thus: "As a rule, bees will not breed without pollen or some substitute. Sometimes honey will be found to contain a larger proportion of floating grains of pollen than at other times; at such times a little brood will be started, but not enough to prove of much value. I have tested the matter to some extent, and found that brood-rearing ceased when I removed the pollen, and started up again when I replaced it."

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark ⊙ indicates that the apiarist is located near the centre of the State named: ♂ north of the centre; ♀ south; ○→ east; ←○ west; and this ♂ northeast; ○↖ northwest; ○↘ southeast; and ♀ southwest of the centre of the State mentioned.

For the American Bee Journal.

The Cause of Bee-Diarrhea.

C. W. DAYTON, (50—114).

After a multitude of variously conducted experiments, I have come to the conclusion that prevalent bee-diarrhea is caused by the moisture, which condenses in the brood-chamber, being taken into the stomach of the bee for the purpose of carrying it out of the hive, and with the same design that a bee drags its dead sister across the alighting-board.

The opportunity to leave the hive being withheld by unpropitious circumstances, the water remains at the disposal of the bees' digestive organs, and there is probably no doubt but that it would produce disorder. The moisture is taken up that the brood-nest may be a fit place for the rearing of brood, and when the pollen is taken away, their anticipation of brood-rearing vanishes, and self-preservation is the height of their energies.

By this theory I have, as yet, been unable to find bees that might be classed as simpletons, and while, like all theories, it may require experience in order to understand its adaptation, I trust that it will always be found adjustable but never "reversible." As would naturally have been supposed, there have appeared in the bee-papers instances of cases of bee-diarrhea for exposition by the apiarian logicians, and, to say the most, quite a number have been "got rid of." But when a bee-keeper states that the colonies in the lower part of his cellar had the diarrhea while those in the upper part and also those left out-of-doors wintered well, confusion, it seems, is complete.

I do not wish to answer this insomuch as to injure its theoretical adaptability to other causes, but I will take it exemplarily that there may be brought to view, by the aid of what I consider to be correct reasoning, some food for thought which it contains, and which is useful for the support of the conclusions which have already been mentioned.

Every one knows that when cold weather begins and the temperature commences to lower, we have to increase the amount of fuel placed upon the fire if we prevent the accumulation of frost on the window-panes; and every one should know the other preventive to be the reduction in the size of our rooms. It is also plain that if the temperature were always the same shere would be the necessity of a steady fire. This is exactly the requisition of affairs on the inside of a bee-hive. But how do we find it? We find the number of bees decreasing and the colony going into a slumber, during which the circulation and respiration is nearly suspended and the production of heat proportionately and gradually lessened until there is barely a draft above the cluster. With the exhalation of the cluster producing so little draft, and being in a temperature which enables it to carry the moisture out at the entrance of the hive, and yet not be too warm for perfect quietness, it would need but a slight fall of temperature to condense moisture on the inside of the hive. The colder the air outside of a bee-hive the greater is the force exerted on the warm air inside of the hive, which force is of the same nature as that exerted upon the air in a cup when it is plunged bottom upward into water. This is the force which stops the circulation of air some distance from the point of exit from the hive and where the condensation takes place which causes water to run out at the entrance. Hence, it should be preferable in scrutinizing for moisture to remove the bottom-board and investigate from below.

It should be remembered that a temperature favorable for the condensation of moisture within the hive is also disposed to confine the bees in a cluster, until a rise in the temperature gives them their liberty. Consequently, to winter well, colonies in hives having tight top-boards should have their brood-chambers contracted so that the exhalations of the cluster may be able to produce a current of air passing out at the bottom of the hive, or be provided with ample upward ventilation, as the exhaled moisture must be disposed of, and as condensation begins where aerial circulation ends.

Nothing, perhaps, better imitates water when getting into a cellar than air of a lower temperature than that of the cellar. I find the difference in temperature at the bottom and top of an air-tight cellar 7x7x16 feet and containing 100 colonies of bees, to be 2°. On the introduction of a 2-inch pipe from the outside, carrying air whose temperature is 20° above zero, the difference is 4½°; and with a 6-inch pipe the difference is 21°, and would be maintained. In accordance with this, how many rat holes would it require to hold the temperature in the lower part of any cellar at the freezing point? The colonies are scarce that would not with an ordinary confinement allow the condensation of moisture in their brood-chambers in such a temperature.

Moreover, successful wintering is more certain in a warm temperature which prevents the condensation of moisture inside of the hives containing the weakest colonies, or in a temperature so low as to restrict the bees from running about the brood-chamber and which should be unrelentingly maintained until the bees are afforded a flight. This should elucidate the successful wintering of bees in warm cellars or buried in snow.

Bradford, ♂ Iowa.

For the American Bee Journal.

Hybrids vs. Italians.

G. J. MOLONEY.

A Danish bee-man and myself agreed to send, last spring, for two colonies of Hybrids and two of Italians in order to decide their superiority. Although heavily handicapped by reason of indifferent pasturage and cold winds blowing off the Lake, the hybrids proved that they were far ahead of the Italians.

Prof. Fowler, of phrenological fame, advocates a union of persons possessing large reflectives with those having large perceptives, as children inherit the most prominent traits of their parents. On the same principle brown German bees are crossed with the Italians. We are told that "Celtic imagination and fire crossed with Saxon will and persistency, has given Great Britain a race of demi-gods."

The Detroit *Evening News* says that Burke Corcoran, America's greatest orator, is of "mixed Norman and Celtic stock which has given Great Britian her greatest political names and which now forms the ablest section of the British Parliamentary Party." Some of America's greatest statesmen are also of mixed origin.

The Plymouth Rock fowl, the "leading strain," is a union of the black Java with two other breeds, England's race-horse was also produced by crossing. The gentle Carniolan bees, about which so much has been said, appear to be a cross between the German and Italian bees. They are very obedient to the admonitions of the smoker. Last fall my bees obtained quite a quantity of pollen, and I am now treating them with salt, water, milk and honey, as our "knowing ones" claim they are specifics for bee-diarrhea.

Rogers City, ♂ Mich.

For the American Bee Journal.

Do Bees Really Hibernate?

WM. JNO. HINCHEY, (5—11).

I really think that there has been nearly enough said about hibernation, a word which, in my opinion, should never have found its way into the columns of a bee-paper; and I cannot imagine how a man like Mr. W. F. Clarke, usually so level-headed, should allow himself, in the present instance, to be carried away by the imaginary conviction that he has made a great discovery. I hope that the following remarks may lead to that clearer light which we as apiarists are seeking after.

Mr. Heddon mentions, on page 716 of the BEE JOURNAL for 1884, two different states or conditions of bees during life; viz., the fully-animated, and the semi-hibernatious or state of

perfect quietude. To these may be added a third condition; viz., a state of *coma* or stupor produced by cold. I wish to make a few remarks on each of these conditions, and their relation to wintering.

First, then, the fully-animated: Bees have been known to winter well in this condition, but usually it is disastrous, as in the case of Mr. Doolittle's bees during the winter of 1883-84. It is, in fact, an abnormal condition in this northern climate; hence, it has no bearing upon the subject in hand.

Second, the semi-hibernatious, or state of perfect quietude, *a la* Heddon; or of hibernation, *a la* Clarke. I think that all bee-keepers are agreed that this is the natural condition of bees during winter, or at any other time of the year when they are not working. Mr. Clarke does not *now* claim to have discovered that bees *really* hibernate. Hibernation is the word he uses to represent that death-like silence which all writers agree to be the natural state instinctively assumed by the bees when all the requirements are met for their perfect wintering, being an *effect* of wintering well, not the *cause*. There is no theory at all about this. Now, what is that state? In almost every way it resembles human sleep. The bees are very quiet, *i. e.* at rest; yet the slightest tap will generally awaken them, and put every bee on its guard, but if then left alone, they quickly become quiet again. I say they *generally* awaken with a slight tap; sometimes, of course, it would take what some would call a pretty hard knock, to arouse them. That is only the degree of lethargy. There are some people who sleep so lightly that the slightest noise will awaken them; others will not be disturbed by loud noises, and in some cases, hardly by being shaken.

What is hibernation? It is generally conceded to be a state of complete torpor, in which nearly all cold-blooded animals, and many warm-blooded ones pass the winter. As bees do not pass into this state during winter (and live), as shown by many writers, hibernation is manifestly an incorrect term by which to describe the quiescent state resembling hibernation. I think that it is an empty honor to be the first to drag a new term into our already voluminous vocabulary, which, however, does not mean what it is meant to express, and should therefore be dropped at once, on the principle of "calling things by their right names."

I will now pass to the third condition of bees, which is a state of *coma* or stupor produced by cold; not because it has anything to do with wintering bees, but because it resembles hibernation so much in every way; This is the condition mentioned by Mr. Wm. Malone, on page 779, of the BEE JOURNAL for 1884, and noticed more or less by all bee-keepers. Mr. Malone, in the above-mentioned article, describes it so fully that there is no use in going over the same ground again. However, I do not know that an exact limit may be placed on the time that bees would live in this state, nor the degree of cold at which death would supervene. It resembles in many ways the comatose state of the human species, only that with the latter it is seldom produced by cold, but only by cold, with bees, so far as yet known. When warmed again the bees are as sprightly as ever.

I imagine that I now hear Mr. Clarke exclaim, "That is just my theory. When the weather is cold the bees become torpid, but when a warm spell comes, they revive, and have a chance to partake of food." Not so fast! A chilled bee (or bees), requires the genial heat of the sun, or of a cluster of bees, or at least 45° Fahr., probably more, to revive it. How often does any one suppose that that temperature in the shade is reached during some winters? Probably not for months together. Therefore, during all ordinary winters, if the bees once entered this torpid condition, they would never revive.

Hence, I think that as "hibernation" is plainly shown to be a misnomer, as applied to bees, and useful only to confuse beginners, some other appellation (if any is needed) should be given to that quiescent state in which bees winter the best.

Tamworth, Ont.

For the American Bee Journal.

The Season of 1884.

A. A. FRADENBURG.

In the spring of 1884 I had 58 colonies of bees, and of those about one-half should properly be classed as nuclei. Apple bloom was abundant, and they secured some surplus from black locust. White clover promised well, and every colony was storing surplus when dry weather cut it off about as suddenly as though all the clover had been mowed down in a day, and the honey crop was ended. By June 20, I had 200 pounds of comb honey and 500 pounds of extracted.

From my 58 colonies I obtained only one natural swarm, and as I desired some increase, and reasoned that as the weather was dry in early summer, we might reasonably expect wet weather in the fall, so that the bees might store enough for winter, I began to divide them in July and August, and my plan was to take the queen with a little less than half of the brood, half of the bees, frames and stores for the new colony, and supply the old colony with a young queen or queen-cell, and fill both hives with empty combs or foundation. The bees just about "held their own" during July, but August and September were such dry months that they got scarcely a taste of anything, and I found it practically impossible to do any work with them, for one could hardly raise the lid of a hive but what robber bees would attack them.

In September I started my apple-evaporating business, and with apples constantly more or less exposed, and a cider mill in my yard, although it was kept closed as much as possible, and another open cider mill within half a mile. I will not attempt to estimate how many bees were killed. Late in November they were in what many would call a deplorable condition. Only a few colonies could be called good, and those that were divided had not increased any, but some had decreased. None had put any stores in the empty combs given them, nor had they drawn out their foundation; 3 I found queenless, and many had not 2 months' stores on hand. I doubled up some, and have to-day 63 colonies on the summer stands, and 29 in cluster or tenement hives, as described last June, without stores.

The important question is, how many of my bees will be alive on May 1, 1885? I have one very favorable condition, and that is, there is very little, and in most cases not any, pollen in the hives, as I do not think that any was gathered after corn gave its pollen; and as I fully proved last winter, to myself at least, that pollen is the cause of bee-diarrhea, I have no dread of that, unless it may be in a few of the best colonies that may have a little left from what was gathered during the early part of the season.

Port Washington, O.

For the American Bee Journal.

What the Times Demand.

DR. W. G. PHELPS.

It is currently reported in mercantile circles that we have "struck bottom," *i. e.*, reached the low-water mark of our depressed times. Be this false or true, one thing seems quite apparent, the price of honey is not likely to crawl up in the same proportion as other farm commodities. May I say *farm commodities*—because the product of the apiary is more properly classed under this head? The days when honey must be termed a luxury, are fast drawing to a close, and probably it is the very best thing that could have happened to bee-keepers. From swaddling clothes, our pursuit has emerged into the full statue of a vast industry. With this growth naturally comes the light emanating from the minds of hundreds of truth-searchers and bright investigators. Thus "the way-faring man though a fool," can scarcely err, if he diligently reads the bee-literature of the day.

Now, with all this, I repeat, comes the reduced profit on the honey production. Well, what are we going to do about it? To my mind, it resolves itself down to this: We must scale down the *expenses* in proportionate ratio. With the babyhood of bee-culture at an end, we must put aside all the pleasant but costly fancies, and let ourselves gracefully down to the wants alike only practical and necessary. Retrenchment must be our motto. Theoretically, perhaps the reader says. No, practically.

To illustrate this point I insist that we shall reduce our labor, implements and materials used in the apiary, down to the minimum. My bee-feeder, for instance, consists of an ordinary frame, with a sheet of tin or thin wood tacked to each side, and reaching within an inch of the top-bar. A

½-inch hole bored through the top-bar for the insertion of the funnel suffices to introduce the food. Should it leak, wax it. I have used such for 5 years. The only objection ever urged against it was that the bees might build comb from beneath the top-bar. So they did once or twice when used very early one spring in the center of the hive. A strip of tin 2 inches in width tacked the length of the top-bar, entirely prevents that, and a piece of wood laid upon the sweets within, prevents any bee from drowning. Such a feeder costs perhaps 20 cts. As fall feeding seems to be coming in fashion, and you feel like falling in line, make such a feeder ere buying a more costly one. Twice filled, it will put almost any colony on winter rations.

"Money saved is money earned." Why, may I ask again, the need of so much handling of comb honey? Where is the sharp Yankee who will devise a combined surplus comb-honey rack (or case), and shipping-package? Ah, my fellow bee-keepers, it must come to that! Every time a section of honey is handled, one cent is added to the cost, to say nothing of additional loss through broken combs and leaky honey.

We must also bring this expense down to the minimum. The bees can fit comb honey to such a case far neater than you, my fellow bee-keepers, and with no fear of loose joints and rattling sections enroute. "Separators are an objection," did you say? "Oh, they must go, which they ought to have done," as the boy says, "before they ever started." For 2 years I have used "nary one." What can be more complete than a surplus case quickly removed from a hive, a top and bottom cover of ½-inch stuff screwed on, and the whole shipped to market undisturbed? No, wild theory, in such a proposition either! Have I not put it in practical operation the past summer? True, I took the pains to add a neat label (with name and address), to the top of each section, and to arrange a glass in one side to show the combs to advantage; but that was scarcely a half hour's job with cases properly made.

For comb honey, the 2-story hive must go, too. Mark that! The "tiering-up" case system in 5 years more will have swept all before it. My 2-story hives have "laid on the shelf" (save for extracting), for 2 years or more, and my experience fully confirms that of Mr. Heddon and others, that the top half story, for it is really aught else, is to be the popular system of the future.

Against my opinions on the question of economy, no doubt the supply dealer will mentally rise to expostulate; but if he regards true prudence, he will go along with the current and cater to the forced economies of his customers. The palmy days of "war prices" for honey are gone, never to return; therefore let all accommodate themselves to present circumstances. Be prepared to sell comb honey at 12 and extracted at 7 cts. per lb., when that day arrives. It won't be lower than that, for the people will have it as they now have our delicious Maryland peaches which, placed within their reach, has created such a demand for the fruit, that our fruit-growers have well nigh contracted the "peach planting craze."

In conclusion, I may add to these mere hints, that there is one thing upon which we can scarce afford to study economy; to-wit, in subscribing for bee-papers. Go for them all if possible, as does the writer. If not possible, select at least two of the most enterprising, and read them carefully and thoughtfully. Just one idea gained from the BEE JOURNAL during the past year, has been worth the subscription price of every paper that I take. Many the gleanings you can thus gather up from the flood of light constantly poured upon our captivating occupation. Money spent for such literature is as "bread cast upon the waters."

Galena, ♂ Md.

For the American Bee Journal.

A Discontented Bee.

WM. F. CLARKE.

A bee was heard to sigh: "Alas!
Life's hardly worth the living,
Matters have come to such a pass,
I'm sick and tired of giving—
In to that cruel tyrant, man,
Who thwarts and robs us all he can.

"Our combs were once fixed fast as fate,
With no unsteady motion;
Now they are made to agitate
At each bee-keeper's notion:
Lifted into the sun and air,
Or whirled in a tin cylinder.

"We used to have an easy time,
All through the pleasant summer;
While willow, maple, clover, lime,
Welcomed each happy comer:
Now we are driven hard and fast,
Long as the honey harvests last.

"Our stores of honey and bee-bread
Are stolen from our cupboards,
Cheap sugar fed to us instead—
Our brood, like Mother Hubbard's
Unlucky dog without a bone,
Of natural food have left them 'none.'

"We're mured in cellars, dumped in pits,
Or shut in murky houses,
Where not a ray of sunlight flits,
And there are no carouses
Such as there used to be of old,
When a warm day dispelled the cold.

"Last, but not least, our combs are turned
Bottom-side-up, regardless
Of that tip-tilting we have learned
As nature's pupils artless:
Our young must cling fast to their beds
To keep from falling on their heads!

"It's time a stop were put to these
Unending innovations,
With loss of comfort and of ease,
I've also lost my patience:
If matters do not quickly mend,
I'll strike, and hoist my latter end!

"Beware, beware, O luckless man!
And cease to play tormentor,
Or we will punish, as we can,
Each painful nervous center.
'Live and let live' must be the law,
Or we'll quit work and daggers draw."

Speedside, Ont.—

☞ The Progressive Bee-Keepers' Association of Western Illinois will meet in Bushnell, Ills., on Thursday, May 7, 1885. Let every bee-keeper who can, be present and enjoy the meeting. J. G. NORTON, *Sec.*

☞ The winter meeting of the Bay of Quinte Bee-Keepers' Association will be held at the City Hall, Belleville, Ont., Feb. 26, 1885, at 1 p. m.

For the American Bee Journal.

"After Swarms," Are they Profitable?

G. W. DEMAREE.

Doubtless much depends on locality, honey resources, etc., as to whether "after swarms" can be made profitable, even when increase is desirable. In a location like my own, "after-swarms" have always cost me, in the way of foundation, winter stores, etc., as much as they are worth. I think, however, if we want to increase our stock, and are willing to pay for them, we may as well do it in this way.

I commenced at this place with just one colony of Italian bees, and by allowing but one prime swarm, as a general thing, I built up an apiary of 50 colonies, and made them pay a profit on the investment all the time. I found out when it was too late to profit by it, that it would have been more profitable for me to have got along slower, by accepting none but first or prime swarms, and preventing all after-swarms.

When my apiary was built up to 50 colonies, I began to see the necessity of suppressing increase, and I began to test all the plans given to the public by experienced bee-masters.

One season I "cut out queen-cells" till I was positively sick of the job, and got an unusual lot of inferior queens as the result. Next I tried giving the parent colony a mature queen-cell, after removing the cells which had caused the swarm. Other cells were started immediately, and the after-swarm would come a little in advance of the natural way; that is all.

I next commenced to "weaken" the swarming colonies by removing frames of brood from time to time, and supplying their places with frames filled with foundation: This suppressed the swarming fever, and "suppressed" my honey crop also, and I dropped it. Other plans were tried with unsatisfactory results, till along came the "Heddon method of preventing after-swarms." I took to it quite naturally, as a drowning man will catch at straws. After trying it, I found that in my location, it would give about the following results: One colony in ten will cast a swarm in the usual way, except that the size of the swarm will be diminished. One-fifth of the swarms will swarm again, by reason of the relay of bees from the parent hive. One colony in ten will "lay out" and sulk away the best of the honey season, while nearly all of the parent colonies are too nearly exhausted to do any good, in the way of surplus honey. The rest of the swarms will "work like a charm." And the work necessary to perform the divers manipulations to carry out the schedule, is anything but "charming."

The "Heddon plan" was laid aside (with the rest of the impracticable plans). By this time my apiary exceeded a hundred colonies, and I began to get desperate. When we have as much of a thing as we want, increase is a burden. If my judgment is not seriously at fault, not one hon-

ey producer in ten can find sale for his surplus bees at a price that will cover the cost of hives, foundation and winter stores; and as long as this state of things exists, some reliable method to control increase will be a desideratum.

After trying many experiments, I believe the cheapest and most effective way of preventing after-swarms, is to pinch the cells which cause the swarming, immediately after the swarm issues, and turn loose among the bees a virgin queen from 1 to 4 days old. This plan is not "new." It is only the application of a little sound philosophy. Bees never start queen-cells in the presence of a virgin queen over *one day old*, if they have accepted her. It is this starting of cells that does all the mischief.

To prevent swarming altogether, my new system of dividing the colony in two divisions, employing the queenless division to produce the surplus honey, and the parent division to produce the working force, re-uniting them as soon as the swarming season is mainly past, will answer the purpose to perfection. But more time is needed to ascertain if the plan is altogether practicable.

Christiansburg, ♁ Ky.

For the American Bee Journal.

Floating Apiaries of the Future.

U. E. DODGE.

Bee-keeping is fast becoming an important industry in the United States and Canada, and the oportunities for honey production and the employment of idle hands are almost unlimited. When we look over the history of bee-keeping for the last quarter of a century and note the growth, prosperity and improvement of this science, may we not with some degree of reason speculate upon its future developments? and whilst the busy workers are snugly housed in their winter quarters beneath our comfortable apartments, and old Boreas blows his icy breath around every corner without, may we not day-dream upon the further advancement of this industry?

Although my bee-keeping scheme may be like "the hibernation theory" and the wintering problem, "without form and void," and darkness dwells upon my beclouded brain, yet thoughts occasionally flit through my mind with visions of the not-far-distant future. As I sit musing, the posibilities of bee-culture are constantly passing before me, and as the panorama passes I see the mighty Mississippi whose source penetrates the frigid regions of the North and whose mouth pours her floods into the tropical seas of the South; whose tributaries reach out and drain a large portion of a continent; and upon whose borders are an endless variety of soil and changing climate, skirting lofty mountains, rich and fertile plains, and extended alluvial bottoms, producing an unbounded variety of honey-producing flowers at almost all seasons of the year upon some portion of its borders. As I look with delight upon this picture, I see steamers of peculiar pattern floating upon her silvery bosom, laden with thousands and tens of thousands of busy workers whose instinct teaches them to sip the luscious nectar wherever honey-producing flowers abound, whether upon the lofty mountain side or deep alluvial valley; and I see bright, intelligent young men as their keepers, whose life-work is the pursuit of apiculture in this novel and peculiar manner.

This may be the outgrowth of an enthusiastic brain, but is it not susceptible of practical test? Let us for a moment scan the picture in all its bearings; let us see whether we have any just grounds for such a grand bee-keeping enterprise! Are there not flowers upon every hillside, plain and valley, bordering upon this great net-work of streams? Are there not a great variety of climates upon its borders, susceptible of being reached by steam navigation? Are there not thousands of sheltered nooks all along those great channels of commerce, where the apiarist may land his industrious freight and move his floating home to secure the secretions of myriads of honey-producing flowers? Are there not hundreds of locations in the "Sunny South," where the wintering problem dwindles almost into insignificance, that may be reached by these floating apiaries? If so, wherein is the difficulty? All that is required is mechanical skill to construct a steamer peculiarly adapted to the purpose, that will carry as many colonies as the proprietor wishes to handle, with one, two, or more helpers, with capacity enough for a dwelling, work-shop, etc., with facilities for rapid and easy loading and unloading hives, storage, etc.

Thus equipped, in the fall, let the apiarist put the bees on board, get up steam and steer for Southern climes, until a favored locality is reached—say in Louisiana, Mississippi or Texas, bordering upon the Mississippi or its tributaries. Here let him remain until the season of flowers in the spring, landing his bees whilst remaining in this location or until the early honey-flow of the locality is nearly past, then put his bees on board, get up steam and steer for more Northern climes and secure another honey-flow, and so on, until the Northern limit is reached, thereby securing an unlimited number of honey-flows during the season, with facilities for comb-honey and extracting on board, securing the honey from each flow in good marketable shape, returning again in the fall to his old or some other good wintering ground, to again construct hives, fixtures, etc., for another season's campaign.

With the power he has at hand, at all times, in a propelling engine, and repeating the work as the seasons roll round, for a lifetime, it makes but little difference where he may be, if his bees have an abundance of honey-producing flowers. His boat is his home, workshop, honey-house and vehicle for marketing his honey; in fact he is frequently in the market as he migrates, or passes the great cities situated upon the banks of these great water-courses. He soon becomes known as a honey-producer, and sales of honey are made in advance of arrival in the great marts of trade.

But I am building this castle too high, and this article is too long. Some vigorous, healthy and practical young man may start an enterprise of this character and push it to its utmost capacity. I will predict (although I may not live to see it realized,) that a quarter of a century hence will find hundreds of apiaries floating upon our Western rivers, from the far North to their extreme regions in the "Sunny South."

Fredonia, ? N. Y.

[This scheme is neither *new* nor practical. Floating apiaries have for centuries been employed in Egypt, Germany, etc. Some ten years ago Mr. Perrine practiced the scheme on the Mississippi, on a large scale, but after making large investments in steam-barges, hives, bees, etc., he made an utter failure of it, and lost some $12,000 in the venture. The chief barrier being immense loss of bees from continual disturbance, change of location, high winds, intervening bluffs and consequent hiding of the barge, close proximity of hives on the boat, etc. No one should think of trying such a scheme unless he has $20,000 to throw away—and still have enough left for the needs of his family.—ED.]

Read at the Michigan Convention.

The Merits of the Carniolan Bees.

A. J. KING.

Next to *Apis dorsata*, less is known of the Carniolan race of bees, practically, by American apiarists, than that of any other which has been supposed to possess merit above our common black and brown bees. Most of us have seen specimens of different importations, besides some bred in this country, but we believe the time to speak with positiveness regarding the various essentials which go to make up the character of the "coming bee" and to ascribe the majority of such essentials to any one particular race, has not yet arrived.

The early impressions, still fresh in the minds of American apiarists, regarding the supposed merits of the Cyprian race have not been justified after thorough trial by persons competent to judge of their merits. The Syrians and Holy Land bees, although superior in a marked degree to the Cyprians, do not yet bear off the palm when compared with our better known and ever-to-be-praised Italians; and the impression seems to be growing among our best informed bee-keepers, that a cross between the Syrians and Italians—breeding the queens of the former to the drones of the latter variety—produces a strain of bees combining in one a greater number of

desirable traits than either of the yellow races separately considered.

The rapid change in color and, in a degree, in the physical conformation of all foreign races of bees in our climate, is known to all breeders, and accounts, in a measure, for the difference observed among writers in describing the new races; the *mental* characteristics or dispositions, however, do not seem to change in a like degree, if at all; hence, the value of continuous experiments in the hope of attaining fixed traits of excellence is not diminished.

The difference in size of the individual bees of the different varieties has been used by some writers to advance the interests of their favorites, but when we observe the difference in size of the bees in different colonies of the same race, together with the fact that a square inch of the combs of all the races now cultivated contains precisely the same number of cells, we are led to conclude that this difference is more fanciful than real; yet we think that there is a slight difference in length of body in favor of the Syrian workers and less in the other foreign races, over our common blacks.

All are familiar with the close resemblance in appearance between the foreign yellow races and of their marked dissimilarity both in appearance and habits, to our common bees; yet the Carniolan race might be easily mistaken, by the casual observer, for our own brown bees, while in their habits they differ even more widely from them than do the yellow races. A close observer would, however, instantly detect differences so constant and marked as to never be in doubt for one moment of the identity of the Carniolans.

Keeping our bees mostly for breeding purposes, and often dividing and performing the other various manipulations necessary in carrying on this feature of the business, we have not had the opportunity of testing them in the production of comb and extracted honey as we would desire; but so far as we have thus tested them, they have far exceeded our most sanguine expectations, and this feeling of satisfaction is shared in by all, without exception, to whom we have sent them. Prof. Hasbrouck, Mr. J. M. Shuck and some others to whom we have sent bees of all the races enumerated in this essay, except *Apis dorsata*, give to the Carniolans their decided preferences.

We have never had bees stand cold and exposure better, or to recuperate faster under adverse circumstances.

Mr. Anthony Grætzman, a native of Austria and a bee-keeper on modern principles, of many years' experience, in a letter just received, speaks thus of the Carniolans: "Upon a series of observations and demonstrations with the different races of bees of the east and south of Europe, I give the highest preference to the Carniolan. As to gentleness, activity, prolificness and their ability to withstand climatic changes in cold regions they are of very marked superiority. As honey-gatherers they are fond of all the clovers, buckwheat, linden and all other sources of honey visited by the Italians. Their fault is in swarming too abundantly."

Of their gentleness, Mr. Benton writes: "There is a race of bees to be found in its purity only in one of the central provinces of Austria, which is so gentle as to cast the gentleness of the gentlest Italians all 'into the shade.' They are the Carniolans from among the rugged Carniolan or Carnic Alps. These bees are larger than the Italians, very prolific and industrious, gray in color, and so good-natured that the veriest novice in bee-culture can handle them without a bee-veil, gloves or smoke. Having recently come from a town through Carniola, Austria, where I have been collecting a lot of colonies of this race, and where I have examined and handled hundreds of hives filled to overflowing with these peaceful workers, I have had every opportunity needed to convince myself of their thorough gentleness."

The editor of the *Buletin d' Apiculteur*, South Switzerland, who has had many years' experience says:

"I have observed in the mountains a very marked superiority on the part of the Carniolans; they are decidedly hardier than all the others, above all than the Italians, which stand only poorly the climate of elevated regions. I have seen the Carniolans working on red clover, whilst the common bees were neglecting it. By increasing the size of the hives reasonably, adding frames already built out, and giving them the necessary ventilation, swarming can be prevented with this race as with others."

He calls attention to the fact that among those who have given their experience with Carniolans, the owners of hives having the combs running from front to rear, had succeeded best in preventing swarms.

New York.

For the American Bee Journal.

Comb Foundation in the Brood-Nest.

8—W. Z. HUTCHINSON, (68—94).

Had not Mr. Bates, on page 54, indicated by figures after his name how many colonies he had, I should have put him down as a "beginner." But few begin the season with 120 colonies, without learning that time can be more profitably used than in opening a hive and securing a frame of brood for each swarm, and then taking off the honey-boxes and opening the hive in 4 or 5 days and inserting a frame of foundation, "and so on, about once a week, till the bees have all the frames they need." When I hive a swarm of bees I want that that shall be the end of it—no opening of hives every 4 or 5 days, "and so on." There seems to be an idea prevalent that because we use movable-comb hives the combs *must* be moved. In the production of comb honey there is seldom any necessity of opening the hives, *i. e.*, the brood department, from one years' end to another. If everything always went well, *i. e.*, colonies never became queenless, or something of the sort, box-hives would answer every purpose in the production of comb honey.

He speaks of putting two or three brood-frames (I presume he means *wide* frames) filled with sections, into the brood department of the hive containing the newly hived swarm. I do not have my comb honey, and in fact, but little honey of any kind stored in the brood department. This plan of having honey stored in the brood department has seen its best days, and will rest in the same grave with the wide-frame system.

He lays down a plan of management which he thinks would not only be ahead of empty frames, but ahead of hiving swarms upon a full set of frames of foundation; aside from saying that it is complicated, it might be said that many bee-keepers *think* that it is profitable to use foundation in all places, but how many *know?*

Mr. B.'s system of hiving swarms upon 5 or 6 combs of brood and honey taken from the old hive, would be very unsatisfactory in this locality. I want the honey-gatherers where the honey-boxes are, during the honey harvest. But few of the bees that hatch from the combs of brood taken from the old hive would be old enough to gather honey before the white honey harvest would be past. This objection would not apply to early swarms, but see how complicated the method! Just compare it with the Heddon method, in which it is not necessary to even open a hive, and all the honey-gatherers are induced to labor in the hive where the sections are; and should the honey harvest soon end, their work is in such a shape that it will bring the highest market price.

He does not think it necessary to use the extractor to give the queen room to lay; neither do I. Make the brood department of such size that the queen can keep it full of brood; and, if necessary, keep her in it with a queen-excluding honey-board, and let the honey be stored in the surplus apartment.

I have not the least doubt but what foundation has come to stay, but my experiments of last year appear to indicate that it is possible to have "too much of a good thing." If any one is inclined to experiment upon this subject, another season, please allow me to suggest the use of a hive in which the brood department is not large enough for the brood-nest and surplus too.

Rogersville, ó Mich.

☞ The New Jersey and Eastern Bee-Keepers' Association will hold their next annual convention at Cooper Union, in New York City, beginning on Wednesday, March 11, 1885, and to continue two days or more. The committee promise a good programme, and extend a cordial invitation to all. W. B. TREADWELL, Ass't. Sec.

☞ The Willamette Valley Bee-Keepers' Association will hold its second meeting at La Fayette, Oregon, on the third Tuesday in June, 1885. All who are interested are invited to attend.

E. J. HADLEY, *Sec.*

For the American Bee Journal.

My Experience with Bee-Diarrhea.

L. L. TRIEM, (105—170).

When in conversation with Dr. Jesse Oren, a few days ago, I asked him this question: "Do your bees show any signs of bee-diarrhea?" He answered: "I do not know. If I thought they had it, I should not go to see them, for I should not want to know it until the very last." Now, when we see with what dread such a bee-keeper as Dr. Oren speaks of bee-diarrhea, is it any wonder if beginners should also have fears? I know of no other successful bee-keeper who has been able to winter bees better than Dr. Oren—I mean with less disease and loss.

On Jan. 1, 1885, I carefully examined all of my 170 colonies of bees which are in one cellar, and 2 colonies showed just a few spots on the fronts of their hives. I will explain how the cellar is arranged, so as to give the reader a better idea of the conditions.

It has a sub-earth ventilator 208 feet long, running down an 8-foot grade, and is made of 6-inch tiling. This supplies fresh air; and for an escape I have an outlet of common, 6-inch stove-pipe connected with the cook-stove pipe, and entering it 2 feet above the stove. The pipe reaches within 10 inches of the cellar floor. The bees were carried into this cellar on Nov. 19 and 20, 1884, and tiered up in rows, part being 2 hives high and the most of them 5 hives high. Only burlap covers were put on top of the frames, and 6-inch strips of boards were placed between each tier of hives. The temperature has been 46° above zero for 30 days, and to-day, it is at 42° above.

Now, to return to the 2 affected colonies:

On Jan. 30, I examined them again and found only the same two affected. The whole fronts of the hives were covered with the excrements. The bees were breeding and restless, and would fly as soon as the light appeared. I removed the hives above them as quietly as possible, and took down both of the ones containing the affected colonies, and found that both would have starved in less than 10 days. The hives were crowded with bees, young and old. I next removed the burlap covers, and as almost all of my hives have feeders in them, I found that these two were ready to receive one quart of sugar syrup.

I made the syrup of 10 lbs. of granulated sugar, 3 lbs. of water, and a piece of tartaric acid the size of a small hickory nut, *a la* Heddon, and fed them, until each had 10 lbs. of it. To-day these two colonies are as tightly clustered and as quiet as any in the cellar. Time will tell whether they will live, but if they die I have lost only the time and have learned a lesson.

In the BEE JOURNAL of Jan. 28, 1885, Mr. A. J. Norris in his article entitled "Pollen First Cause of Winter Loss," touches a very important point, viz: "Removing the means of brood-rearing," and continues: "But there is one thing of which I do not feel assured, *i. e.*, if the bees are robbed of the necessaries with which to rear their young, will the old bees live long enough in the spring to build up strong?" etc.

I agree here with him, and as a remedy, say, feed sugar syrup in October until all pollen is covered over and sealed up, and as the bees consume this sugar stores first, no pollen will be exposed until March. As there is room enough for brood-rearing to commence, not much disease will be the consequence.

I cannot believe that a colony which does not breed until April can place its record beside one which bred and was full of young bees in March. I am a strong advocate of feeding sugar for winter stores, and I believe that the pollen theory is correct; only tell us how we can leave just a little in the hive and in such a shape as to do no harm.

La Porte City, Iowa, Feb. 2, 1885.

For the American Bee Journal.

Honey-Dew and Worker-Larvæ.

C. THEILMANN.

On page 41, Prof. A. J. Cook says: "It will take years to persuade all bee-keepers that the so-called honey-dew does not fall like the gentle rain from heaven, yet that it never so falls, is very certain."

I am one of those who cannot be persuaded so easily on the honey-dew question. From my boyhood until now, it has been natural for me to study and investigate Nature's curiosities, and from what I have observed about honey-dew, the Prof. or any other person cannot convince me that all honey-dew is the secretion of plant, bark, or other lice, unless they can prove to me that these lice can fly and secrete while on the wing. Often have I seen honey-dew away from timber or trees, from 80 to 160 rods, on the prairie and tame grasses and vegetables, and nearly all that I have tested had, contrary to the louse honey, a pleasant taste, and was quite light in in color. Will the Professor please explain how that honey-dew got there? If not "like a gentle rain from heaven," it surely did not come from below, as it was always on the tops of the leaves.

Further on, the Professor says: "That bees can change worker larvæ to those of drones, is entirely beyond the possibilities, even of the very skillful workers." I do not know that bees can change worker larvæ into drones, but I do know that they can make drones from what are called worker eggs.

In an article on page 594 in the BEE JOURNAL for 1883, I described my experiences by which I am convinced that bees do make drones from worker eggs; for after the swarm referred to deserted the hive, I very closely examined the piece of comb in which the eggs were deposited, and the queen was a perfect one; no cell was missed on either side of the comb, and it was filled with eggs almost to its lower end, where the cells were not more than ⅛ of an inch deep; none of the cells were built out the full length, and therefore I could see the eggs very plainly. There was not a miss nor two or more eggs in a cell within the whole circle. Now, then, is it natural for a queen, right after swarming, to lay drone eggs among worker eggs in the first piece of worker comb which is built in its new home? This would be a rule of which I have not yet heard in the 17 years of my bee-keeping. Even the poorest queens that I ever had (such as would rather lay drone eggs than worker eggs), laid all worker eggs for at least 4 or 5 of their first days in their new homes.

It is entirely beyond any doubt that the above-described eggs were not all worker, and would surely have hatched out worker bees, had the swarm, which I hived on the piece of comb, not lost its queen while swarming, and had not its instinct led it to make a queen, drones and workers from those eggs to preserve its existence. Laying workers in that colony were excluded. While they had nearly filled the hive with drone-comb, no eggs or brood of any kind could be seen, when the young queen commenced to lay.

If I understand Prof. Cook, he claims that drone-eggs have no sperm. It seems to me that if the drone-eggs of a perfect queen could be examined or dissected "correctly," that a sperm would be found. It is entirely beyond the possibilities for a black queen to produce yellow drones, if she is not fertilized by a yellow drone. These facts alone prove the fallacy of the sperm theory.

Thielmanton, Minn.

For the American Bee Journal.

How Does He Know?

DR. D. C. SPENCER.

In these days when the apiarist seems more than ever to be endeavoring to get at facts, sifting them as best he may, from much of chaff and theory, as he carefully scans such an apparently able article as that on page 85, he feels like asking, "How does he *know?*" Has he *known* "what bees do in winter?" Has he carefully and repeatedly noted the action of the bees in their winter cluster during severe cold weather, which being subjected to a low degree of temperature—say 20° to 30° below zero—as they "take a full meal of honey and come outside, the next inside doing the same, and so on until the outside ones are crowded in, warmed and get their fill, and come outside in turn to cluster over the rest?"

Sometimes the writer of the above tells us what he has "thought" and and what he "thinks;" now if he will tell us what he *knows* about the subject in hand, and *how* he knows it, *then*, if the evidence is sufficient and conclusive, we may set down such and such points as facts, but not until then.

Augusta, Wis.

Local Convention Directory.

Time and place of Meeting.

1885.

Mar. 3.—Southern Wisconsin, at Janesville, Wis.
J. T. Pomeroy, Sec., Edgerton, Wis.

Mar. 11.—New Jersey and Eastern, at N. Y. City.
W. B. Treadwell, Sec., 16 Thomas St., New York.

April 3.—N. E. Kansas, at Hiawatha, Kans.
L. C. Clark, Sec., Granada, Kans.

Apr. 9, 10.—Western, at St. Joseph, Mo.
C. M. Crandall, Sec., Independence, Mo.

Apr. 28.—DesMoines County, at Burlington, Iowa.
Jno. Nau, Sec., Middleton, Iowa.

May 4.—Linwood, Wis., at Rock Elm Centre, Wis.
B. Thomson, Sec., Waverly, Wis.

May 7.—Progressive, at Bushnell, Ills.
J. G. Norton, Sec., Macomb, Ills.

May 28.—N. Mich. Picnic, near McBride, Mich.
F. A. Palmer, Sec., McBride, Mich.

June 19.—Willamette Valley, at La Fayette, Oreg.
E. J. Hadley, Sec.

Dec. 8—10.—Michigan State, at Detroit, Mich.
H. D. Cutting, Sec., Clinton, Mich.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Mass Convention.—H. D. Cutting, Clinton, Mich., writes as follows concerning the meeting to be held at Detroit in 1886:

It is an excellent suggestion that the "North Western" hold their meeting at the same time and place as the National Society. It will be a large meeting and ample accommodations will be furnished at greatly reduced rates. We can get reduced rates on the railroads so that all can come and have a grand, good meeting.

Favorable Winter for Bees.—G. W. Hurwood, Waco, ⊙ Tex., on Feb. 9, 1885, says:

Yesterday, after a warm spell of more than a week during which my 50 colonies of bees had daily flights, they were busy on the prairies all day, and returned laden with pollen of a very bright color. The flower from which it is gathered is a tiny white blossom of such insignificant size that it must be sought for to be found, but it is evidently very rich in pollen. In this latitude the season opens about the middle of February with great changes in the weather, until the end of March. The present winter has been a favorable one for bees in this section.

Extremely Cold.—F. M. Taintor, Elm Grove, ○ Mass., on Feb. 5, 1885, writes thus:

I hope that bee-keepers who are wintering their bees on the summer stands, are in a warmer climate than this. We had a very warm fall, but all through January it has been extremely cold, the thermometer ranging below zero nearly all of the time, and several times it was 20° below. My bees are all in the cellar. I now employ artificial heat in the cellar, but before I used this method of heating it, I lost a great many colonies, and since I have used it, I have not lost a colony. I think that dry, pure air and a proper and even temperature, are two prime essentials in successful wintering. My bees are in fine condition.

Report, from J. W. Sturwold, Haymond, ○+ Ind., on Feb. 17, 1885:

My bees had a flight yesterday, the first since Feb. 3. Only one colony has died, and that was a small, late swarm; the rest are in good condition, although the winter has been a severe one, the mercury being between zero and 20° below. I use the Heddon hive and one-half of them are packed *a la* Heddon, the rest being protected only on top. All are on the summer stands. I have never wintered my bees in the cellar, although I have a good one, and I have never lost but one or two colonies since 1879–80. I never take any honey out of the brood-chamber, and I attribute my success to that; for I believe that if we leave the brood-chamber to them, to prepare for themselves, there is not much danger of bee-diarrhea appearing.

Good.—Prof. A. J. Cook writes as follows concerning the next meeting of the National Society:

I am glad that the date of the next meeting of the National Society is given and criticisms asked for. The date is all right, unless it keeps away our Southern bee-keepers. We want them very much, especially Judge Andrews, Dr. Blanton, Dr. Brown and Paul Viallon. I am thankful for the suggestion as to the "Northwestern" also meeting at Detroit. I hope it will be done.

Report, from John Monroe, South Kent, ○ Conn., on Feb. 13, 1885:

The season of 1884 was a very good one for this locality. I commenced in the spring with 6 colonies of bees, 3 blacks and 3 Italians, increased them to 11 colonies, and took 526 lbs. from the old colonies. I am wintering them on the summer stands, and all are in good condition. I have kept bees for 3 years in the movable-frame hives, and I have always wintered my bees on the summer stands, never having lost but one colony, and that died from starvation. I do not pay any attention to pollen, but give them plenty of honey and they come out all right.

Foul Brood, etc.—J. A. Noble, Norval, Ont., on Feb. 16, 1885, writes as follows:

Last spring I started with 3 colonies and increased them to 6. I have reason to believe that foul brood is in my apiary, for early in the spring there was lots of dead brood. I asked an old bee-keeper if he knew the cause for it, and he thought that it was chilled brood; but from what I have read, I think that it was foul brood; for when I opened the cells they emitted a bad odor, in fact I could smell it when passing the hives. I kept on spraying the combs and bees once a week all summer, with salicylic acid. It may have checked it, but it did not cure them, as it continued all last fall. Can any one prescribe a remedy? I would rather kill them all than have the trouble I had last summer. I made 2 small nuclei on June 28, 1884, and gave each of them an Italian queen-cell. The cells hatched out on July 2, and I saw one queen leave the hive on July 7, which returned in 20 minutes, having been mated in that time. I looked at the other one and fancied that I saw the queen fly from the front of the hive, but I was not sure, so I waited to see her come back, which she did in 15 minutes, and was mated all right. On July 11, both queens were laying all right. Is there anything strange in the above? I never expected to see a queen go out on her wedding trip. I mentioned it to two bee-keepers and they told me that they had never seen a virgin queen leave the hive to be mated. I obtained a virgin Cyprian queen and introduced her to a small nuclei on Aug. 1, and on Aug. 6 she left the hive to be mated; she returned in 10 minutes, not mated; so I sat on the top of the hive to watch her come out again, but by some means or other I missed her, as I saw her come in in about ¾ of an hour from the time she went out at first. I noted all that happened to my bees last season, thinking it might be useful to some. I am an invalid and cannot work much, so I have lots of time to watch my bees. I had 200 lbs. of honey. I do not know how the bees are wintering here, but mine are on the summer stands packed in sawdust and chaff. We have had a very cold winter; on last Thursday morning, the mercury was about 30° below zero.

[Try phenol, as recommended by Mr. Frank Cheshire.—ED.]

Wintering Bees.—O. B. Barrows, Marshalltown, Iowa, on Feb. 17, 1885, writes as follows concerning his bee-cellar:

My cellar has about 700 square feet of surface on its bottom and is about 8 feet deep, 7 feet under-ground. It has 5 windows 12x16x24 inches. I never bank it up nor darken the windows. It contains 66 colonies of bees. I remove the blocks from the fronts of the hives which are facing the cellar wall, and only a few inches away from it, so that the light from the windows cannot shine directly into the hives. There is a chimney 35 feet high extending from the cellar bottom to the top of the house. This chimney has a 6-inch hole in it which is always open, and a draft of air is constantly passing through it. I have wintered my bees successfully in this way for 8 or 10 years.

☞ The Southern Wisconsin Bee-Keepers' Association will hold its second annual meeting at the usual place in Janesville, on the first Tuesday in March 1885. All bee-keepers are cordially invited to attend.

J. T. POMEROY, *Sec.*
C. O. SHANNON, *Pres.*

Special Notices.

☞ We often get a number of notices and advertisements on Mondays, intended for the next BEE JOURNAL. As we close the forms on Saturdays, all such notices *must be here* on Saturday morning, or cannot appear until the following week.

☞ Our rates for two or more copies of the book, "Bees and Honey," may be found on the Book List on the second page of this paper. Also wholesale rates on all books where they are purchased "to sell again."

FRUIT GROWING.—We have received a copy of an illustrated pamphlet of 64 pages, entitled "How to Propagate and Grow Fruit," by Chas. A. Green, editor of the *Fruit Grower*, Rochester, N. Y. Price 50 cents. To any one sending us a new subscriber for the Weekly or 4 for the Monthly, besides his renewal for either edition, we will present a copy of this book.

☞ We want one number each of the JOURNAL of Aug. 1866, Feb. 1867. Any one having them to spare will please send us a Postal card. We will take the first that offer them, and pay 25 cents each for the 2 numbers.

☞ To Canadian subscribers let us say that we have made arrangements so that we can supply the *Farmer's Advocate* of London, Ont., and the Monthly BEE JOURNAL for one year at $1.25 for the two.

☞ The long winter evenings will be well occupied by reading bee literature. When renewing your subscription, it will be well to get some good bee-books. See our list of books on the second page and select what you need.

☞ Do not forget to send for a Binder in which to file your JOURNAL and thus have the full benefit of it during the whole year.

☞ Those who have the Monthly for 1883 or 1884 will be pleased to learn that we have a few Binders still left for those years—Price 50 cents each. Send for them before all are gone, for we do not intend to get any more made.

Create a Local Honey Market.

Now is the time to create Honey Markets in every village, town and city. Wide-awake honey producers should get the Leaflets "Why eat Honey" (only 50 cents per 100), or else the pamphlets on "Honey as Food and Medicine," and scatter them plentifully all over the territory they can supply with honey, and the result will be a *demand* that will readily take all of their crops at remunerative prices. The prices for "Honey as Food and Medicine" are as follows:

Single copy 5 cts.; per doz., 40 cts.; per hundred, $2.50. 500 will be sent postpaid for $10.00; or 1000 for $15.00. On orders of 100 or more, we will print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

☞ To give away a copy of "Honey as Food and Medicine" *to every one who buys a package of honey*, will sell almost any quantity of it.

Apiary Register—New Edition.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it. The prices will hereafter be as follows:

For 50 colonies (120 pages).....$1 00
" 100 colonies (220 pages)..... 1 25
" 200 colonies (420 pages)..... 1 50

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

Farmer's Account Book.

This valuable book contains 166 pages, is nicely printed on writing paper, ruled and bound, and the price is $3.00. We will club it and the Weekly BEE JOURNAL for a year for $4.00. If you have already sent us $2.00 for the Weekly BEE JOURNAL for a year, we will send the Book for another $2,00, making $4.00 in all. If you want it sent by mail, add 20 cents for postage.

We can supply these books at the publisher's price, or will make a **present** of one copy for every club of TEN subscribers to the Weekly BEE JOURNAL for one year, with $20. Four subscribers to the Monthly will count the same as one for the Weekly.

Now is the time to get up Clubs. Who will work for a copy of this valuable book.

Sample Copies of the BEE JOURNAL will be sent FREE upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office.

CLUBBING LIST.

We will supply the **American Bee Journal** one year, and any of the following Books, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	*Club*
The Weekly Bee Journal,	$2 00.	
and Cook's Manual, latest edition	3 25..	3 00
Bees and Honey (T.G.Newman) cloth	3 00..	2 75
Bees and Honey (paper covers).....	2 75..	2 50
Binder for Weekly Bee Journal.....	2 75..	2 50
Apiary Register for 100 colonies	3 25..	3 00
Dzierzon's New Bee Book (cloth)....	4 00..	3 00
Dzierzon's New Book (paper covers)	3 50..	2 75
Quinby's New Bee-Keeping.	3 50..	3 25
Langstroth's Standard Work.....	4 00..	3 75
Root's A B C of Bee Culture (cloth)	3 25..	3 10
Alley's Queen Rearing.....	3 00..	2 75
The Weekly Bee Journal one year and Gleanings in Bee-Culture (A.I.Root)	3 00..	2 75
Bee-Keepers' Magazine (A.J.King).	3 00..	2 75
Bee-Keepers' Guide (A.G.Hill).....	2 50..	2 35
Kansas Bee-Keeper.....	3 00..	2 75
The Apiculturist, (Silas M. Locke)..	3 00..	2 90
The 6 above-named papers.....	6 50..	6 00

THOMAS G. NEWMAN,
925 West Madison Street., Chicago, Ill.

☞ For two subscribers for the Weekly BEE JOURNAL (or 8 for the Monthly) for one year, we will present a Pocket Dictionary, and send it by mail postpaid.

Advertisements.